FINAL TEST PROCEDURE

After any disassembly of the CoughAssist, the unit should be tested for proper operation before being put back into service. This test can be done without the top cover on in order to gain access to the blower pressure adjustment potentiometers. Refer to Figure 9. However, proper precautions should be taken to avoid electrical shock if this is done.

TEST SET-UP

1. Use a rubber plug or similar object to temporarily block the Patient Connection on the front of the unit.
2. Verify that the Pressure Gauge is zeroed. If adjustment is needed, remove the gray dot covering the adjustment hole and adjust using a small flat blade screwdriver. Replace the dot.
3. On all models, set the Inhale Pressure knob fully clockwise, and Inhale Flow and Pressure knobs fully counterclockwise. On the CA models, set the Manual/Auto switch to Manual, and set each time knob to approximately 1 second.
4. Plug the CoughAssist into an appropriate electrical outlet.

FUNCTIONAL TESTS

1. Place the power switch to the “on” position and note that the green light in the switch comes on.
2. Turn the Pressure knob through the full range of blower speeds and be sure the speed of the motor increases steadily. With the Pressure knob fully clockwise, allow the unit to warm up for 1 to 2 minutes.
3. Adjust the Variac to set the input line voltage. If a 230 VAC application, adjust the variac to set the input line voltage to 230 V $\pm$ 5 VAC. If a 115 VAC application, adjust the Variac to set the input line voltage to 115 V $\pm$ 5 VAC. If a 100 VAC application, adjust the Variac to set the input line voltage to 100 $\pm$ 3 VAC.
4. With the Pressure knob set at the minimum speed (counterclockwise) move the Manual Control Lever to the Inhale position (to the right) and note that the pressure on the gauge reads between 2 and 5 cmH_2O. Move the Manual Control Lever to exhale (to the left) and note that the gauge reads between -2 and -5 cmH_2O. Turn the Pressure knob to maximum (clockwise) and repeat inhale and exhale test noting that the reading on the gauge is between 54 and 66 cmH_2O. Release the manual control lever from the inhale and exhale positions at maximum pressure and not that the lever moves to the center and pressure drops immediately to 0 cmH_2O.
5. If the correct pressures are not achieved the pressure control can be adjusted as follows. First remove the top cover. If the unit has not been run for a while, turn it on with the Pressure knob fully clockwise and allow the unit to warm up for 1 to 2 minutes.

WARNING

To avoid electrical shock, take the normal precautions when working with the unit plugged in and the cover is removed.

6. On the Circuit Board attached to the front panel locate the two trim potentiometers directly above the Patient Outlet on the right. Refer to Figure 9. The top trim pot adjusts the minimum pressure (clockwise to increase), while the bottom trim pot adjusts the maximum pressure (counterclockwise to increase). First adjust the minimum pressure (2 to 5 cmH_2O), then adjust the maximum (54 to 66 cmH_2O), then check the minimum again since the two adjustments interact somewhat.

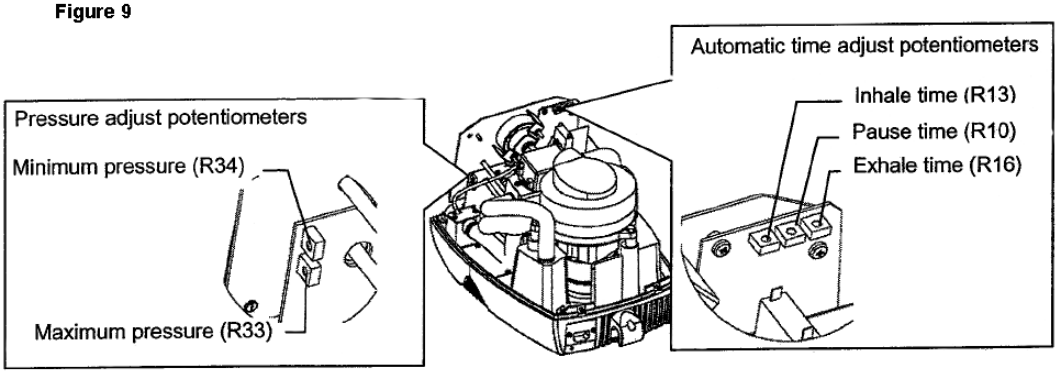
Repeat the adjustments a few times to be sure the minimum and maximum pressures, positive and negative, are correct.

7. Inhale Pressure Test - with the Manual Control Lever in the inhale position (to the right) adjust the pressure control knob to attain 40 cmH_2O. Set inhale Pressure knob all the way counterclockwise. Note the reading on the gauge: it should be between 18 and 22 cmH_2O. Turning the inhale pressure knob slowly clockwise should increase the pressure gradually back to 40 cmH_2O.
8. Inhale Flow Check - turn the Pressure knob fully clockwise, actuate the Manual Control Lever to Inhale (to the right) and note the pressure reading on the gauge; release the control lever. Set the Inhale Flow to minimum (clockwise). Actuate Manual Control Lever to Inhale and verify that the pressure reading has dropped less than 10 cmH_2O below the previous reading (maximum flow).
9. Remove the rubber stopper from the patient outlet. Check the flow by actuating the Manual Control Lever to Inhale and note the flow of air out of the unit. Release the Manual Control Lever. Set Inhale Flow to maximum (counterclockwise), and repeat the test. Note that the flow out of the unit has increased markedly.
10. Automatic timing function test (CA models only) - Set the pressure to minimum. Move the switch from manual to automatic (Inhale, exhale, and pause should already be set to 1 second). Verify that the unit immediately begins with the inhale pressure, followed by exhale (negative) pressure then drops to 0 cmH_2O and continues to repeat.
11. Set the switch back to manual and verify that the pressure drops to 0 cmH_2O. Return to Auto.
12. One at a time set each of the timing knobs to 5 seconds and verify that each knob affects the correct phase, that is, inhale time varies the inhale pressure phase, exhale time varies the exhale pressure phase and pause time varies the zero pressure phase.
13. Timing check (CA models only) - Set the inhale, exhale and pause time knobs to 5 seconds. Using a stopwatch time each phase and verify that each one lasts between 4.8 and 5.2 seconds. Set the knobs to 1 second each and using a stop watch verify that each phase lasts between 0.9 and 1.1 seconds.

NOTE

These times are adjusted at the factory and usually do not need to be altered. However, if adjustment is required, this is controlled by the three trim potentiometers at the top of the circuit board, to the left of the Pressure Gauge, clockwise to increase the time. Left trim pot (R13) adjusts Inhale time. Middle trim pot (R10) adjusts Pause time. Right trim pot (R 16) adjusts Exhale time. Refer to Figure 9.

Figure 9



RESPIRONICS®

COUGHASSIST FINAL INSPECTION FORM & TEST DATA SHEET

Serial Number:	
Date:	
Stopwatch Serial Number:	

Step 1	*Green Light ON*	*Pass*	*Fail*

Step 4	*Pressure Knob Operation*	*Range*	*Gauge Reading*	*Pass*	*Fail*
		2 to 5 cm H_2O	*cm H_2O*		
		-2 to -5 cm H_2O	*cm H_2O*		
		54 to 66 cm H_2O	*cm H_2O*		
		-54 to -66 cm H_2O	*cm H_2O*		
		0 cm H_2O	*cm H_2O*		

Step 7	*Inhale Pressure Test*	*Range*	*Gauge Reading*	*Pass*	*Fail*
		18 to 22 cm H_2O	*cm H_2O*		
		40 cm H_2O	*cm H_2O*		

Step 8	*Inhale Flow Check (Blocked)*	*Range*	*Gauge Reading*	*Pass*	*Fail*
		at least 50 cm H_2O	*cm H_2O*		
		less than 10 cm H_2O drop	*cm H_2O*		

Step 9	*Inhale Flow Check (Unblocked)*	*Pass*	*Fail*

Step 10	*Automatic Timing Function Test (CA Model Only)*	*Pass*	*Fail*

Step 11	*Auto – Manual Switch Verification (CA Model Only)*	*Pass*	*Fail*

Step 12	*Timing Knob Phase Check (CA Model Only)*	*Pass*	*Fail*

		Phase	Range	Time (use stopwatch)	Pass	Fail
Step 13	Timing Check	Inhale	4.8 to 5.2 seconds	seconds		
		Exhale	4.8 to 5.2 seconds	seconds		
		Pause	4.8 to 5.2 seconds	seconds		
		Inhale	0.9 to 1.1 seconds	seconds		
		Exhale	0.9 to 1.1 seconds	seconds		
		Pause	0.9 to 1.1 seconds	seconds		

NOTE

- *Mark Unused sections of this Data Sheet with N/A.*
- *Complete and Attach QA sticker.*

Tested By (Print / Sign): _____ / _____ *Date:* ____ / ____ / ____